

Appln No. 09/715,944

Amdt date March 17, 2005

Reply to Office action of December 17, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A hyperlinked annotation data system comprising:
a tuner;
a demodulator in communication with said tuner;
a video decoder in communication with said demodulator;
a display device in communication with said demodulator;
a first data store storing mask information;
a second data store storing object information;
a memory storing annotation data; and
a central processing unit in communication with said demodulator and said memory[[]],

wherein said memory stores a computer program that controls, when executed by said central processing unit, a display of said annotation data on said display device, and
[[.]]

wherein a first thread is capable of adjusting a behavior of mask data and a second thread is capable of adjusting behavior of object data.

2. (Original) The system of claim 1 further comprising:

a viewer interaction device;

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wherein said computer program displays said annotation data on said display device in response to a viewer activating said viewer interaction device.

3. (Currently Amended) The system of claim 1 ~~further comprising:~~

~~a second memory storing mask information;~~

wherein said mask information is used by said computer program to identify regions on said display device.

4. (Original) The system of claim 3, wherein said mask information comprises a mask time stamp.

5. (Original) The system of claim 4, wherein said mask time stamp is used by said computer program to display said mask information in temporal relation to a video frame.

6. (Currently Amended) The system of claim 3 ~~further comprising:~~

~~a third memory storing object information;~~

wherein said object information is used by said computer program to display objects in a video frame on said display device.

7. (Original) The system of claim 6, wherein said object information comprises an object time stamp.

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8. (Original) The system of claim 7, wherein said object time stamp comprises an expiration time stamp that is employed by said computer program to delete said object information after a specified time.

9. (Original) The system of claim 6 wherein said object information comprises;

an object mapping table including an object number for an object in a video frame and a corresponding first identifier; and

an object properties table referenced by said first identifier, said object properties table including a first set of annotation data.

10. (Original) The system of claim 9 wherein said first set of annotation data includes an annotation data field and a second identifier referencing a second set of annotation data.

11. (Original) The system of claim 10 wherein said annotation data field is a title data field and said second identifier references a string including a title of said object.

12. (Original) The system of claim 10 wherein said annotation data field is a menu field and said second identifier references a selector including a set of display identifiers and a corresponding set of action identifiers.

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13. (Original) The system of claim 10 wherein said first and second identifiers are never duplicated by the system.

14. (Original) The system of claim 10 wherein said identifier is a variable value.

15. (Currently Amended) A method of using broadcast information comprising hyperlinked annotation data, comprising ~~the steps of:~~

employing a receiver adapted to receive, decode, store and manipulate broadcast information, said receiver having a central processor unit and at least one memory device[[s]];

receiving a stream of broadcast information;

decoding said broadcast information to recover mask information, each mask having a mask time stamp associated therewith;

storing said mask information in a first data queue in said at least one memory device[[s]];

decoding said broadcast information to recover object information, each object having an object time stamp associated therewith;

storing said object information in a second data queue in said at least one memory device;

comparing said mask time stamp with a time stamp of a displayed video frame; and

displaying said mask based on a relationship between said mask time stamp and said stamp of said displayed video[[.]],
wherein a first thread is capable of adjusting a behavior

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of mask data and a second thread is capable of adjusting behavior of object data.

16. (Cancelled)

17. (Currently Amended) The method of claim 15, wherein said decoding to recover mask information is performed by a ~~first active~~ the first thread performing operations on said first data queue, and said comparing is performed by a ~~second active~~ third thread performing operations on said first data queue.

18. (Original) The method of claim 17, wherein the step of comparing said mask time stamp with a time stamp of a displayed video frame commences with a comparison of an earliest mask time stamp with a time stamp of a most recently displayed video frame.

19. (Cancelled)

20. (Original) The method of claim 15, further comprising the steps of:

in the event that said mask time stamp corresponds to a frame not yet displayed:

(a) decoding said associated mask into an image buffer;

(b) checking said mask time stamp to see if said decoded mask is to be displayed immediately;

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(c) if said decoded mask is to be displayed immediately, displaying said decoded mask; and

(d) if said decoded mask is to be displayed at a later time, sleeping for a time calculated to end at the time said decoded mask is to be displayed and immediately upon awakening displaying said decoded mask.

21. (Currently Amended) A method of broadcasting information comprising hyperlinked annotation data, comprising ~~the steps of:~~

encoding mask information having a mask time stamp associated therewith; [[and]]

transmitting said encoded mask information in conjunction with a video signal for display in a temporal relation with said video signal based on said mask time stamp[[]];

encoding object information having an object time stamp associated therewith; and

transmitting said encoded object information in conjunction with said video signal for display in a temporal relation with said video signal based on said object time stamp,

wherein a first thread is capable of adjusting a behavior of mask data and a second thread is capable of adjusting behavior of object data.

22. (Cancelled)